

## United States Patent [19]

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## Nadolink

**[54] SYSTEM FOR MONITORING SURFACE STRESS AND OTHER CONDITIONS IN STRUCTURES**

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[51] **Int. Cl.<sup>6</sup>** ..... **G01L 1/24**

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250/341.8; 358/35.5

[58] **Field of Search** ..... 250/341.4, 341.1,  
250/340, 341.8; 356/35.5

[56] **References Cited**

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[57] **ABSTRACT**

A system for monitoring a structure is built on a printed circuit board (PCB) mounted at the surface of the structure. A piece of single crystal silicon is mounted on the PCB and is in contact with the structure. An infrared source directly illuminates the silicon while an infrared detector is focused thereon to monitor isochromatic fringe patterns projected from the silicon as a direct indication of stress at the surface. One or more other sensors are coupled to the PCB for collecting data indicative of other physical conditions experienced by the structure. A wireless system communicates with each such sensor so that the data so collected can be received at a remote location.

**18 Claims, 1 Drawing Sheet**

